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METALLOTHIONEIN A (MTA) (FRAGMENT).
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COlinus virginianus (Bobwhite quail) (Common bobwhite).
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Archosauria; Aves; Neognathae; Galliformes; Phasianidae;
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SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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-: FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS.

-: DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOMAIN AND ARE COORDINATED VIA CYSTEINVI THIOLATE BRIDGES TO 11 CYSTEINE LICANDS. CLUSTER B. THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

-: SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Celniker S.E., Kabhurner M., Henderson S.M., Ra George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.M., RA Barlon G.G., Worthan J.R., Yandell M.D., Zhang O., Chen L.X., RA Burtio G.G., Worthan J.R., Yandell M.D., Zhang C.Chen L.X., RA Burtio G.G., Royers Y.-H.C., Blazel R.G., Champe M., Pfeiffer B.D., RA Barlaw R.M., Baysan J.A., Ra, H.-J., Andrews Pfannkoch C., Baldwin D., RA Barlaw R.M., Basus A., Baxendale J., Bayraktaroglu L., Beasley E.M., Ra Ballew R.M., Bock P.V., Berman B.P., Bhandari D., Bolshakov S., RA Burtis K.C., Busam D.A., Burtier H., Cadleu E., Center A., Chandra I., Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Ra Burtis K.C., Busam D.A., Burtier H., Cadleu E., Center A., Dietz S.M., Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Cherry J.M., Cawley S., Dahlke C., Davenport J.B., Davies P., RA Gebabat W.A., Classer K., RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gaan P., Harris M., Fa Harris M., Howland T.J., Wei M.-H., Diedz S.M., Pelsischmann W., RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Degwam C., RA Harris N.L., Marvey D., Kraft C., Kravitz S., Kulp D., Lai Z., Liang Y., Lin X., Mattel B., McIncosh T.C., McLeod M., McPherson D.L., RA Lasko P., Lei Y., Levitsky A.A., Li J. J. Liang Y., Lin X., RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., RA Lasko P., Lei Y., Levitsky A.A., Li J., Li R., McPherson D.L., Ra Liang Y., Walley M., McPherson D.L., McPherson D.R., Nelson K., Nusskern D.R., Pacleb J.M., R., Ra Lasko P., Lei Y., Lang Y., Li R., Pacleb J
    RESULT 4
M87F_DROME
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-88211557; pubMed-2835228; Kuhn R., Schaefer U., Schaefer M.; "Cis-acting regions sufficient for spermatocyte-specific transcriptional and spermatid-specific translational control of the Drosophila melanogaster gene mst(3)gl-9."; EMBO J. 7:447-454(1988).
-!- TISSUE SPECIFICITY: TESTIS.
-!- DEVELOPMENTAL STAGE: PRIMAR
-!- DOMAIN: THIS PROTEIN IS MOS
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                                                                                     MTA_SPAAU STANDARD; PRT; 60 AA P52727; 01-OCT-1996 (Rel. 34, Created) 01-OCT-1996 (Rel. 34, Last sequence update) 15-DEC-1998 (Rel. 37, Last annotation updat METALLOTHIONEIN A (MT A).
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                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei; Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Percoidei; Sparidae; Sparus.
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***Kille P., Olsson P.E.;

**Kille P., Olsson P.E.;

**Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.

**Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.

**I FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

**POWAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: POUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOMAIN AND ARE CORROINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11 CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

***TIABITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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METALLOTHIONEIN A
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P52721;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes; Zoarcoi
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METALLOTHIONEIN B
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Characterization DNA 6:519-528(19)
                MEDLINE-88111026; PubMed=2448099;
Bonham K., Zafarullah M., Gedamu L.;
"The rainbow trout metallothioneins: molecular cloning
                                                                                Oncorhynchus mykiss (Rainbow trout) (Salmo gairdneri), and Salvelinus alpinus (Arctic Char). Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei;
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PIR: B27490; B27490.

PIR: S15997; S16997.

PIR: S15509; S15509.

HSSP: P04355; 2MRT.

INTERPRO; IPRO00006; -..

INTERPRO; IPRO3019; -..

PPAM; PF00131; metalthio; 1.
  METAL
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"Metallothionein cDNA sequences and gene expression in arctic char

"Metallothionein cDNA sequences and gene expression in arctic char

(Salvelinus alpinus) following metal and PCB exposure.";

MAI. Environ. Res. 46:551-554(1998).

-!- FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE

RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

-!- DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS:

FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA

DOMAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11

CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE

BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

-!- SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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PROSITE; PS00203; METALLOTHIONEIN_VRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kille P., Stephens P.E., May J.,
"Elucidation of cDNA sequences for metallothioneins from rain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=91316146; PubMed=1859844; Kille P., Stephens P.E., Kay J.;
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"Structure of the rainbow trout metallothionein B gene characterization of its metal-responsive region.";
Mol. Cell. Biol. 8:4469-4476(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochim. Biophys. Acta 1089:407-410(1991).
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MEDLINE=89039876; PubMed=3185557;
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SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M18104; AAA49566.1; -. M22487; AAA49567.1; -. X59394; CAA42037.1; -.
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    Metal-thiolate cluster;
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PRINTS; PR00860; MTVERTEBRATE.
PROSITE; P800203; METALLOTHIONEIN_VRT;
PROSITE; P800203; Metal-thiolate cluster;
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Salmo salar (Atlantic salmon).
Eukaryota; Metazoa; Chordata; Craniata;
Actinopterygii; Neopterygii; Teleostei;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-OCT-1996 (Rel. 01-NOV-1997 (Rel. METALLOTHIONEIN B
                                                                                                                                                                                            EMBL; X97275; HSSP; P18055;
                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
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Submitted (APR-1996) to the
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                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=LIVER;
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                                                                                                                                                                                                                                                                                                     mitted (APR-1996) to the EMBL/GenBank/DDBJ databases. FUNCTION: METALLOTHLONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY). DOWAIN: CLASS I METALLOTHLONEINS CONTAIN 2 METAL-BINDING DOMAINS: POUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOWAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11 CYSTEINE LIGANDS. CLUSTER B. THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES. SIMILARITY: BELONGS TO PAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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Amphibia; E
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METALLOTHIONEIN (MT).
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                                                                                                                                                                                                                          FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS.

DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOMAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11 CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Batrachia; Caudata; Salamandroidea; Ambystomatidae;
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Metal-thiolate cluster; Chelation

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                                                                                                   EMBL; X97278; CAA65933.1;
HSSP; P18055; 1MRB.
ZFIN; ZDB-GENE-990415-159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi
Cypriniformes; Cyprinidae; Rasborinae; Danio.
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PFAM; PF00131; metal
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P52723;
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                 Carassius auratus (Goldfish).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi
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                                                                                                                      "PCR-cloning of goldfish and tilapia metallothionein complementary {\tt DNAs."} ;
                                                                                                                                      Chan K.M.;
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                                       FUNCTION: METALLOTHIONEINS HAVE A HIGH CONTENT OF CYSTEINE RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).

DOMAIN: CLASS I METALLOTHIONEINS CONTAIN 2 METAL-BINDING DOMAINS: FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA DOMAIN AND ARE COORDINATED VIA CYSTEINYL THIOLATE BRIDGES TO 11 CYSTEINE LIGANDS. CLUSTER B, THE CORRESPONDING REGION WITHIN THE BETA DOMAIN, CAN LIGATE THREE DIVALENT IONS TO 9 CYSTEINES.

SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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35, Last annotation update)
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P52724;
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutel.

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neot.

Acanthomorpha; Acanthopterygii; Percomorpha; Perciformes;

Notothenioidei; Channichthyidae; Chaenocephalus.
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HSSP; P18055; 1MRB.
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mitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
FUNCTION: METALLOPHIONELNS HAVE A HIGH CONTENT OF CYSTEINE
RESIDUES THAT BIND VARIOUS HEAVY METALS (BY SIMILARITY).
DOMAIN: CLASS I METALLOPHIONEINS CONTAIN 2 METAL-BINDING DOMAINS:
FOUR DIVALENT IONS ARE CHELATED WITHIN CLUSTER A OF THE ALPHA
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi
Cypriniformes; Cyprinidae; Cyprininae; Cyprinus.
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SIMILARITY: BELONGS TO FAMILY 1 IN METALLOTHIONEIN SUPERFAMILY.
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